Region
Stock
Data Set
User

SubRegion
Species **Steelhead**

ID	Questions	Name: / ScenarioID: / Program: / Purpose:	Scenario1	Scenario2	Scenario3	Scenario4	Scenario5
			Segregated Harvest				
1	Does the broodstock chosen represent natural populations native or adapted to the watersheds in which hatchery fish will be released?						
2	If population has been extirpated, is the broodstock chosen likely to adapt to the system based on life history and evolutionary history?						
3	Does the broodstock chosen display morphological and life history traits similar to the natural population?						
4	Does the broodstock chosen have a pathogen history that indicates no threat to other populations in the watershed?						
5	Does the broodstock chosen have the desired life history traits to meet harvest goals? (e.g. timing and migration patterns that result in full recruitment to target fisheries)?						
6	What is the percent natural origin fish in the hatchery broodstock?						
7	Do natural origin fish make up less than 5% of the broodstock for this program?						
10	Is the percent natural origin fish used as broodstock for this program estimated?						
11	Are adult returns recycled to lower to provide additional harvest opportunities?						
12	Are representative samples of natural and hatchery population components collected with respect to size, age, sex ratio, run and spawn timing, and other traits important to long-term fitness? (For integrated populations, consider both natural and hatchery components; for segregated populations, you should only consider the hatchery component.)						
13	Does the proportion of the spawners brought into the hatchery follow a"spread-the-risk" strategy that attempts to improve the probability of survival for the entire population (hatchery and natural components)?						
14	Are sufficient broodstock collected to maintain an effective population size of 1000 fish per generation? (More than 500 successful spawners of each sex.)						
15	Does the program avoid population transfers and subsequent releases of eggs or fish from outside the watershed?						
16	Is the broodstock collected and held in a manner that results in less than 10% prespawning mortality?						
17	Do you have guidelines for acceptable contribution of hatchery origin fish to natural spawning?						
18	Are guidelines for hatchery contribution to natural spawning met for all affected naturally spawning populations?						
19	Is the water source [for adult holding] specific-pathogen free?						
20	Does the water used [for adult holding] result in natural water temperature profiles that provide optimum maturation and gamete development?						
21	Is the water supply [for adult holding] protected by alarms?						
22	Is the water supply [for adult holding] protected by back-up power generation?						
23	Are males and females available for spawning on a given day randomly mated?						
24	Are gametes pooled prior to fertilization?						
25	Are back-up males used in the spawning protocol?						
26	Are precocious males (mini-jacks and jacks) used for spawning as a set percentage or in proportion to their contribution to the adult run? (note whether mini-jacks are used in the comment box.)						

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27	Is the water source [for incubation] pathogen-free?			NA	NA	NA	NA
28	Is the water source [for incubation] specific-pathogen free?			NA	NA	NA	NA
29	Does the water used [for incubation] provide natural water temperature profiles that result in hatching/emergence timing similar to that of the naturally produced population?			NA	NA	NA	NA
30	Can incubation water [for incubation] be heated or chilled to approximate natural water temperature profiles?			NA	NA	NA	NA
31	Is the water supply [for incubation] protected by flow alarms?			NA	NA	NA	NA
32	Is the water supply [for incubation] protected by back-up power generation?			NA	NA	NA	NA
33	Are eggs incubated under conditions that result in equal survival of all segments of the population to ponding? (Does any portion of the eggs derive a survival advantage or disadvantage from incubation procedures? If yes, then mark NO for response)			NA	NA	NA	NA
34	Are families incubated individually? (Includes both eying and hatching.)			NA	NA	NA	NA
36	Are agency, tribal, or IHOT species-specific incubation recommendations followed for flows?			NA	NA	NA	NA
37	Are agency, tribal, or IHOT species-specific incubation recommendations followed for substrate?			NA	NA	NA	NA
38	Are agency, tribal, or IHOT species-specific incubation recommendations followed for density parameters?			NA	NA	NA	NA
39	Are disinfection procedures implemented during incubation that prevent pathogen transmission between populations of fish on site? (Do you have written protocols? If so, describe in the data comment box.)			NA	NA	NA	NA
40	If eggs are culled, is culling done randomly over all segments of the egg-take?			NA	NA	NA	NA
41	Is the water source [for rearing] specific-pathogen free?			NA	NA	NA	NA
42	Does the water used [for rearing] provide natural water temperature profiles that result in fish similar in size to naturally produced fish of the same species?			NA	NA	NA	NA
43	Does the hatchery operate to allow all migrating species of all ages to by-pass or pass through hatchery related structures?			NA	NA	NA	NA
44	Is the water supply [for rearing] protected by alarms?			NA	NA	NA	NA
45	Is the water supply [for rearing] protected by back-up power generation?			NA	NA	NA	NA
46	Are fish reared under conditions that result in equal survival of all segments of the population to release? (In other words, does any portion of the population derive a survival advantage or disadvantage from rearing procedures? If yes, then mark NO in box.)			NA	NA	NA	NA
47	If juveniles are culled, is culling done randomly over all segments of the population? (respond yes if juveniles are not culled). Make sure to capture in the comments box the number culled, and the rational for culling.			NA	NA	NA	NA
48	Is the correct amount and type of food provided to achieve the desired growth rate?			NA	NA	NA	NA
49	Is the correct amount and type of food provided to achieve the desired condition factors for the species and life stege being reared?			NA	NA	NA	NA
50	Does the program use a diet and growth regime that mimics natural seasonal growth patterns? If not, describe the differences in the comment field?			NA	NA	NA	NA
51	Is the program attempting to better mimic the natural stream environment by providing natural or artificial cover?			NA	NA	NA	NA

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ID	Questions	Name: Scenario1 ScenarioID: Program: Segregated Purpose: Harvest	Scenario2	Scenario3	Scenario4	Scenario5
52	Are fish reared in multiple facilities or with redundant systems to reduce the risk of catastrophic loss?	NA	NA	NA	NA	NA
53	Are agency, tribal, or IHOT juvenile rearing standards followed for loading?		NA	NA	NA	NA
54	Are agency, tribal, or IHOT juvenile rearing standards followed for density?		NA	NA	NA	NA
55	For captive broodstocks, are fish maintained on natural photoperiod to ensure normal maturation?	NA	NA	NA	NA	NA
56	For captive broodstocks, are fish maintained reared at 12C to minimize disease?	NA	NA	NA	NA	NA
57	For captive broodstocks, are diets and growth regimes selected that produce potent, fertile gametes and reduce excessive early maturation of fish?	NA	NA	NA	NA	NA
58	For captive broodstocks, are families reared individually to maintain pedigrees?	NA	NA	NA	NA	NA
59	Are the fish produced qualitatively similar to natural fish in size (fpp and length)?		NA	NA	NA	NA
60	Are the fish produced qualitatively similar to natural fish in morphology?	NA	NA	NA	NA	NA
61	Are the fish produced qualitatively similar to natural fish in behavior?		NA	NA	NA	NA
62	Are the fish produced qualitatively similar to natural fish in growth rate?		NA	NA	NA	NA
63	Are the fish produced qualitatively similar to natural fish in physiological status?		NA	NA	NA	NA
64	Are fish released at sizes and life history stages similar to those of natural fish of the same species?		NA	NA	NA	NA
65	Are volitional releases during natural out-migration timing practiced?		NA	NA	NA	NA
66	Are fish released in a manner that simulates natural seasonal migratory patterns?		NA	NA	NA	NA
67	Are fish released in stream reaches within the historic range of that population?		NA	NA	NA	NA
68	Are fish released in the same subbasin as rearing facility? This question is trying to determine if fish (juveniles) are transported into the subbasin.		NA	NA	NA	NA
69	Has the carrying capacity of the subbasin been taken into consideration in sizing this program in regards to determining the number of fish released?		NA	NA	NA	NA
70	Are 100% of the hatchery fish marked so that they can be distinguished from the natural populations?		NA	NA	NA	NA
71	Does hatchery intake screening comply with Integrated Hatchery Operations Team (IHOT), National Marine Fisheries Service, or other agency facility standards?		NA	NA	NA	NA
72	Does the facility operate within the limitations established in its National Pollution Discharge Elimination System (NPDES) permit?		NA	NA	NA	NA
73	If the production from this facility falls below the minimum production requirement for an NPDES permit, does the facility operate in compliance with state or federal regulations for discharge?		NA	NA	NA	NA
74	Is the facility sited so as to minimize the risk of catastrophic fish loss from flooding?		NA	NA	NA	NA
75	Is staff notified of emergency situations at the facility through the use of alarms, autodialer, and pagers?		NA	NA	NA	NA

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76	Is the facility continuously staffed to ensure the security of fish populations on-site?			NA	NA	NA	NA
77	Do you have a numerical goal for total catch in all fisheries?			NA	NA	NA	NA
78	Do you have a goal for broodstock composition (hatchery vs. natural) in the hatchery?			NA	NA	NA	NA
79	Do you have a goal for spawning escapement composition (hatchery vs. natural) in the wild?			NA	NA	NA	NA
80	Do you have a goal for smolt-to-adult return survival?			NA	NA	NA	NA
81	What is the percent hatchery origin fish (first generation) in the natural spawning escapement (for the same species/race)?			NA	NA	NA	NA
82	Do adults from this program make up less than 5% of the natural spawning escapement (for the species/race) in the subbasin?						
83	Do adults from this program make up between 5 and 30% of the natural spawning escapement (for the species/race) in the subbasin.						
84	Do adults from this program make up more than 30% of the natural spawning escapement (for the species/race) in the subbasin.						
85	Is the percent hatchery origin fish (first generation) spawning in the wild estimated?			NA	NA	NA	NA
86	Are standards specified for in-culture performance of hatchery fish?			NA	NA	NA	NA
87	Are in-culture performance standards met?			NA	NA	NA	NA
88	Are standards specified for post release performance of hatchery fish and their offspring?			NA	NA	NA	NA
89	Are post-release performance standards met?			NA	NA	NA	NA
90	Are hatchery programming and operational decisions based on an Adaptive Management Plan? (For example, is an annual report produced describing hatchery operations, results of studies, program changes etc? If a written plan does not exist then the answer is No.)			NA	NA	NA	NA

Report 1/2: Benefits and Risks of the Hatchery Program

Hatchey Practices	Target Population			Other Populations Impacted			Environmental Factors	Monitoring & Effectiveness
	Harvest	Diversity & Spatial Struct.	Abundance & Productivity	Abundance & Productivity	Diversity & Spatial Struct.	Harvest Interactions		
Broodstock Choice	L	L	L	L	L	L	NA	L
Broodstock Collection	L	L	L	L	L	L	NA	L
Adult Holding	L	L	L	NA	NA	NA	NA	NA
Spawning	NA	L	L	L	L	L	NA	NA
Incubation	L	L	L	NA	NA	NA	NA	NA
Rearing	L	L	L	L	NA	NA	L	NA
Release	L	L	L	L	L	L	NA	L
Facilities	L	NA	L	NA	NA	NA	L	NA
M&E	NA	NA	NA	NA	NA	NA	NA	L
Effectiveness	NA	NA	NA	NA	NA	NA	NA	L
Accountability	NA	NA	NA	NA	NA	NA	NA	L
Scenario1 Total Score	L	L	L	L	L	L	L	L
Scenario2 Total Score	NA	NA	NA	NA	NA	NA	NA	NA
Scenario3 Total Score	NA	NA	NA	NA	NA	NA	NA	NA
Scenario4 Total Score	NA	NA	NA	NA	NA	NA	NA	NA
Scenario5 Total Score	NA	NA	NA	NA	NA	NA	NA	NA